

02/06/12





## **Technical Report for**

K.P. Kauffmann Company, Inc.

Wattenberg Tank

Accutest Job Number: D31362

Sampling Date: 01/26/12

## Report to:

Apex Consulting Services PO Box 369 Louisville, CO 80027-0369 mhattel@msn.com; kgilbert@kpk.com

ATTN: Mike Hattel

Total number of pages in report: 26



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Client Service contact: Shea Greiner 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)
This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.
Test results relate only to samples analyzed.

Mountain States • 4036 Youngfield St. • Wheat Ridge, CO 80033-3862 • tel: 303-425-6021 • fax: 303-425-6854 • http://www.accutest.com

Brad Madadian

**Laboratory Director** 

## **Sections:**

## **Table of Contents**

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	
Section 3: Sample Results	
3.1: D31362-1: TANK-1	
3.2: D31362-1F: TANK-1	
Section 4: Misc. Forms	9
4.1: Chain of Custody	10
Section 5: Metals Analysis - QC Data Summaries	
5.1: Prep QC MP6759: Ca,Mg,K,Na	
Section 6: General Chemistry - QC Data Summaries	
6.1: Method Blank and Spike Results Summary	
6.2: Blank Spike Duplicate Results Summary	
6.3: Duplicate Results Summary	
6.4: Matrix Spike Results Summary	25
6.5: Matrix Snike Dunlicate Results Summary	

4

5

0

## Sample Summary

K.P. Kauffmann Company, Inc.

Job No:

D31362

Wattenberg Tank

Sample	Collected			Matr	ix	Client
Number	Date	Time By	Received	Code	Туре	Sample ID
D31362-1	01/26/12	11:30 MH	01/26/12	AQ	Water	TANK-1
D31362-1F	01/26/12	11:30 MH	01/26/12	AQ	Water Filtered	TANK-1





### CASE NARRATIVE / CONFORMANCE SUMMARY

Client: K.P. Kauffmann Company, Inc.

Job No

D31362

Site:

Wattenberg Tank

Report Date

2/6/2012 10:11:33 AM

On 01/26/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.3 °C. The sample was intact and properly preserved, unless noted below. An AMS Job Number of D31362 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

### Metals By Method SW846 6010C

Matrix AQ

Batch ID: MP6759

- The sample was digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D31447-1MS, D31447-1MSD were used as the QC samples for the metals analysis.

### Wet Chemistry By Method ASTM D287

Matrix ALL

Batch ID: GN13450

The data for ASTM D287 meets quality control requirements.

### Wet Chemistry By Method EPA 1664A

Matrix AQ

Batch ID: GP6429

- The sample was prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

### Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ

Batch ID: GP6393

- The sample was prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D31337-2MS, D31337-2MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Chloride analysis.
- D31362-1 for Nitrogen, Nitrite and Nitrate: Elevated detection limit due to matrix interference.

#### Wet Chemistry By Method SM20 2540C

Matrix AQ

Batch ID: GN13454

- The sample was analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D31337-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.



## 2

## Wet Chemistry By Method SM20 5310B

Matrix AQ

Batch ID: GP6403

- The sample was prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D31208-1DUP, D31337-1MS, D31337-1MSD were used as the QC samples for the Total Organic Carbon analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.



ded developing	Amil 198 to
	dail Leonager and

Client Sample ID: TANK-1 Lab Sample ID:

D31362-1

Matrix:

AQ - Water

Date Sampled: 01/26/12 Date Received: 01/26/12

Percent Solids: n/a

Project:

Wattenberg Tank

## **General Chemistry**

Analyte	Result	RL	Units	DF	Analyzed	Ву	Method
Chloride	11100	250	mg/l	500	01/26/12 15:59	JML	EPA 300/SW846 9056
HEM Oil and Grease	46.0	5.3	mg/l	1	02/02/12	SWT	EPA 1664A
Nitrogen, Nitrate <sup>a</sup>	< 1.1	1.1	mg/l	25	01/26/12 14:50	JML	EPA 300/SW846 9056
Nitrogen, Nitrite a	< 31	31	mg/l	500	01/26/12 15:59	JML	EPA 300/SW846 9056
Solids, Total Dissolved	20400	10	mg/l	1	01/30/12	JK	SM20 2540C
Specific Gravity by Hydrome	ete 1.0143			1	01/27/12	CJ	ASTM D287
Sulfate	96.5	13	mg/l	25	01/26/12 14:50	JML	EPA 300/SW846 9056
Total Organic Carbon	847	43	mg/l	43	01/30/12 16:46	NS	SM20 5310B
pH	7.41		su	1	01/26/12 15:30	CT	SM20 4500H

(a) Elevated detection limit due to matrix interference.



Client Sample ID: TANK-1 Lab Sample ID: D31362-1F

Matrix:

AQ - Water Filtered

**Date Sampled:** 01/26/12

Date Received: 01/26/12

Percent Solids: n/a

Project:

Wattenberg Tank

### **Dissolved Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	199000	20000	ug/l	5	02/01/12	02/02/12 јв	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Magnesium	35100	10000	ug/l	5	02/01/12	02/02/12 ЈВ	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Potassium	93800	50000	ug/l	5	02/01/12	02/02/12 JB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>
Sodium	6830000	20000	ug/l	5	02/01/12	02/02/12 јв	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA2158

(2) Prep QC Batch: MP6759



Misc. Forms	
Custody Documents and Oth	er Forms

Includes the following where applicable:

• Chain of Custody



## CHAIN OF CUSTODY

HAM												
260	1	C	L	J	7	r	E		C	3	7	T.
		1	 h	-		-		_		:	_	_

4036 Youngfie	eld St., Whea	at Ridge, CO 8	0033	
03-425-6021	FAX: 303-	425-6854	FED-EX Tracking #	Bottle Order Control #

Ward	ACCUTE	57.				30	J5-425-0	1021	FAZ	X: 31	03-42	-0854	•		· i i accomig						100: 00:			
- Control	Laborator	ries												Accute	st Quote #		77		3 4	Accutes	I Job#	0 3	313	362
		40.3												4/15	6 7.			11		Ļ		-7		
	Client / Reporting Information	नक्षां ()		्रवे भारत	Proj	ect Info	rmation		ar.Nonane	W.C.			1. P1 . V.	1 100	7 *				Requi	sted A	nalysis		4	Matrix Codes
Company N	K.P. Kauffman Company, Inc.			Project N	ame:	WAT	ENBE	RG	TAN	K														OW- Drinking Water GW- Ground Water
Address				Street																				WW- Water
	Broadway, Suite 2800			-											μī									SW- Surface Water
City	State		Zip	City					State						₹		₹						1	SO- Soli SL-Sludge
Denve		80202-46		Fort Lt	pton					0					巨匠		Z			l				OI-OII
Project Con	tect: Kent Gilbert	kgilbert@kok	COM	Project #										1664	(NITRATE, NITRITE E, CHLORIDE)		CATIONS (Ca, K, Mg, NA)	GRAVITY						LIQ- Other Elquid
Рһоле #	303-825-4822			Fax#										IS I	물빛		'n,	RA						AIR- Air
Samplers's	Name MICHAEL HATTEL (30	3-665-1400)		Client Pu	rchase Order	#							7591	GREASE	Z u		3 (							201 001 0014
Accutest		SUMMA#		Collect	ion			Nun	nber (	of pr	eserv	ed Bo		8	FA F		No.	CIF						SOL-Other Solid WP-Wipe
Sample #	Field ID / Point of Collection	MEOH Vial #	Date	Time	Sampled by	Matrix	# of bottles	2	Nach	SON S	NO.	M-HSO.	MECH	OIL	ANIONS (N SULFATE,	Ŧ	CAT	SPECIFIC	E L	ည				LAB USE ONLY
	TANK - I		1-26-12	1130	MDH	LIQ	7	х		,	x			х	х	х	х	Х	х	х				0
				1								П												(20)
										$\top$	T	П												YAMY
				_					+	+	+-											_	+	1//4/4/1
								$\vdash$	+	+	+	H	+		1				_		$\rightarrow$		-	
									-	+	+	Н	_											
									4	4	1	Ц									$\rightarrow$			
									П															
tuledra, d <sub>a</sub> ja	Turnaround Time ( Business days)	in timetal store of	Vir beganin.	Lander Harris	A SOUTH FREE PARTY.	Data De	fiverable	inform	ation	-3	100 / 1	ieYBb	i Elita de la	idianienie.		A Train by	MILE AND		C	omments	/Rema	rks		The state of the s
Х	Std. 10 Business Days	Approved By:	/ Date:		Comn	nercial "/	<b>\</b> "		FULL	L CLF	•													
				-	<u> </u>	nercial "E	3*				ategor				<u> </u>									
		-		-		duced		Щ			ategor	В			1									
					NJ Fu			$\blacksquare$	State	Forr	me													
				-	x Hard C	ору		X	PDF						DDE 6	oni a	lee to	Mika	LIAH	al with	6 ADE	Y at m	hattal/	2msn.com
	16 <sup>-75</sup>	,		•											- Di- C	ору а	iau ic	HILL	riati	SI WILL	IMFL	.X at 111	nactori	gillan.com
Emer	gency T/A data avaliable VIA La	ablink		•											PDF c	ору а	lso to	Ken	t Giib	ert wi	th KP	K at kg	ilbert@	kpk.com
		Custody must be	document	woled be	each time s	amples	change	pose			ncludi	ng cou	rier de	livery.							D. L. L.	<b>CHARLISCEN</b>	dhuganin	to the constitution of
Keiinguisi	and by questions:	2/	Date Time:	131	Received By:	. /	11 1	$\mathcal{O}$	1/20		elinquis	ea By			100	Date Time				Received	ı ay:			
1 Relinquisi	ed by:		Pale Time:	1215	Received By	=/_	4	>	121		elinguis	sed Bv				Date Time	):			2 Received	By:			
3					3		-					-								4	-			
Relinquisi	ed by:		Data Time:		Received By:					Ci	ustody	es #	<u> </u>		Preserve	d where a	pplicab					On Ice	Coole	r Temp.
					-							H	1									1		Z

D31362: Chain of Custody

Page 1 of 2





## Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D313	362	Clier	nt: K.P.KAUFF	MAN COMPAN	Y INC.	Immediate Client Service	es Action Requi	red: No
Date / Time Received: 1/26	2012 12:	15:00 PM	No. Co	olers:	1	Client Service Actio	n Required at Lo	gin: No
roject: WATTENBERG TAN	K				Airbill #	s: HD		
1. Custody Seals Present: 2. Custody Seals Intact:  Cooler Temperature  1. Temp criteria achieved: 2. Cooler temp verification: 3. Cooler media:	lce	4. Smpl E	C Present: ∂ates/Time OK	Y or N  G	Sample labels     Container labe     Sample conta	iner label / COC agree: ity - Condition within HT: accounted for:	<ul><li>✓</li><li>✓</li><li>✓</li><li>✓</li><li>✓</li><li>✓</li></ul>	L 
Quality Control Preservation  1. Trip Blank present / cooler:  2. Trip Blank listed on COC:  3. Samples preserved properly:  4. VOCs headspace free:			v		Analysis requ     Bottles receiv     Sufficient vol	ved for unspecified tests ume rec'd for analysis: instructions clear:	Y or N 2	
Comments					o. Fine in g			

D31362: Chain of Custody

Page 2 of 2





Metals Analysis	
QC Data Summaries	

## Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- · Serial Dilution Summaries

## BLANK RESULTS SUMMARY Part 2 - Method Blanks

#### Login Number: D31362 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP6759 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

02/01/12

Prep Date:					02/01/12
Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	5.9	5.9		13.120
Antimony	30	3.1	3.1		
Arsenic	25	5.9	5.9		
Barium	10	1.1	1.1		
Beryllium	10	.44	.5		
Boron	50	4.8	4.8		
Cadmium	10	.27	.27		
Calcium	400	9.6	15	10.6	<400
Chromium	10	.18	.79		
Cobalt	5.0	.35	.35		
Copper	10	.85	2.8		
Iron	70	3.4	13		
Lead	50	1.6	2.1		
Lithium	2.0	.28	1.2		
Magnesium	200	5.8	10	2.4	<200
Manganese	5.0	.053	.31		
Molybdenum	10	.45	.87		
Nickel	30	.43	1		
Phosphorus	100	11	20		
Potassium	1000	55	55	61	<1000
Selenium	50	3.8	3.8		
Silicon	50	3.8	3.8		
Silver	30	.18	.31		
Sodium	400	110	110	5.3	<400
Strontium	5.0		.25		
Thallium	10	2.9	2.9		
Tin	50	5.5	9.9		
Titanium	10	.11	.31		
Uranium	50	1.5	3.5		
Vanadium	10	.16	.22		
Zinc	30	.28	1.8		

Associated samples MP6759: D31362-1F

Results < IDL are shown as zero for calculation purposes (\*) Outside of QC limits



#### BLANK RESULTS SUMMARY Part 2 - Method Blanks

Login Number: D31362 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP6759 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested



## MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D31362 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP6759 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

02/01/12

Metal	D31447-		Spikelot MPICPALL	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	anr				
Beryllium					
Boron					
Cadmium	anr				
Calcium	54800	80200	25000	101.6	75-125
Chromium	anr				
Cobalt					
Copper					
Iron	anr				
Lead	anr				
Lithium					
Magnesium	20600	46100	25000	102.0	75-125
Manganese	anr				
Molybdenum					
Nickel					
Phosphorus					
Potassium	1230	28300	25000	108.3	75–125
Selenium	anr				
Silicon					
Silver	anr				
Sodium	26200	52300	25000	104.4	75-125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP6759: D31362-1F

Results < IDL are shown as zero for calculation purposes (\*) Outside of QC limits



#### MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D31362 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP6759 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits (anr) Analyte not requested  $\,$ 

16 of 26
ACCUTEST.
D31362

#### MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D31362 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP6759 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

02/01/12

Metal	D31447- Original		Spikelo MPICPAL		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium						
Boron						
Cadmium	anr					
Calcium	54800	79900	25000	100.4	0.4	20
Chromium	anr					
Cobalt						
Copper						
Iron	anr					
Lead	anr					
Lithium						
Magnesium	20600	46000	25000	101.6	0.2	20
Manganese	anr					
Molybdenum						
Nickel						
Phosphorus						
Potassium	1230	28200	25000	107.9	0.4	20
Selenium	anr					
Silicon						
Silver	anr					
Sodium	26200	52000	25000	103.2	0.6	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP6759: D31362-1F

Results < IDL are shown as zero for calculation purposes (\*) Outside of QC limits



# 5.1.2

#### MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D31362 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP6759 Matrix Type: AQUEOUS Methods: SW846 6010C

Units: ug/l

Prep Date:

Metal

18 of 26
ACCUTEST.
D31362

## SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D31362
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP6759 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/1

Prep Date:

02/01/12

Metal	BSP Result	Spikelot MPICPALL		QC Limits
Aluminum			TATE OF	
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium	25200	25000	100.8	80-120
Chromium	anr			
Cobalt				
Copper				
Iron	anr			
Lead	anr			
Lithium				
Magnesium	25200	25000	100.8	80-120
Manganese	anr			
Molybdenum				
Nickel				
Phosphorus				
Potassium	26300	25000	105.2	80-120
Selenium	anr			
Silicon				
Silver	anr			
Sodium	25900	25000	103.6	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP6759: D31362-1F

Results < IDL are shown as zero for calculation purposes (\*) Outside of QC limits



# 5.7.3

#### SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D31362 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP6759 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested



General	Chemistry

QC Data Summaries

## Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries



## (C)

## METHOD BLANK AND SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D31362
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Bromide	GP6393/GN13433	0.20	0.0	mg/l	20	20.5	102.5	90-110%
Chloride	GP6393/GN13433	0.50	0.0	mg/l	20	19.9	99.5	90-110%
HEM Oil and Grease	GP6429/GN13523	5.0	0.0	mg/l	40	32.8	82.0	78-114%
Nitrogen, Nitrate	GP6393/GN13433	0.045	0.0	mg/l	4.52	4.08	90.3	90-110%
Nitrogen, Nitrite	GP6393/GN13433	0.061	0.0	mg/l	6.09	6.28	103.1	90-110%
Solids, Total Dissolved	GN13454	10	0.0	mg/l	400	396	99.0	90-110%
Sulfate	GP6393/GN13433	0.50	0.0	mg/l	30	30.0	100.0	90-110%
Total Organic Carbon	GP6403/GN13463	1.0	0.0	mg/l	7.2	7.37	102.4	90-110%
pH	GN13430			su	8.00	8.03	100.4	99.3-10

Associated Samples: Batch GN13430: D31362-1 Batch GN13454: D31362-1 Batch GP6393: D31362-1 Batch GP6403: D31362-1 Batch GP6429: D31362-1 (\*) Outside of QC limits

## BLANK SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D31362 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit
HEM Oil and Grease	GP6429/GN13523	mg/l	40	33.8	3.0	20%

Associated Samples: Batch GP6429: D31362-1 (\*) Outside of QC limits

64

## DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D31362 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN13454	D31337-1	mg/l	1770	1780	0.6	0-25%
Total Organic Carbon	GP6403/GN13463	D31208-1	mg/l	2.2	2.3	4.4	0-20%

Associated Samples: Batch GN13454: D31362-1 Batch GP6403: D31362-1 (\*) Outside of QC limits

#### MATRIX SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D31362 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Bromide	GP6393/GN13433	D31337-2	mg/l	0.0	2.5	2.4	96.0	80-120%
Bromide	GP6393/GN13433	D31337-2	mg/l	0.0	2.5	2.4	96.0	80-120%
Chloride	GP6393/GN13433	D31337-2	mg/l	5.5	10	14.9	94.0	80-120%
Nitrogen, Nitrate	GP6393/GN13433	D31337-2	mg/l	3.7	5.65	8.8	90.3	80-1209
Nitrogen, Nitrite	GP6393/GN13433	D31337-2	mg/l	0.0	0.305	0.30	98.5	80-1209
Nitrogen, Nitrite	GP6393/GN13433	D31337-2	mg/l	0.0	0.305	0.30	98.5	80-1209
Sulfate	GP6393/GN13433	D31337-2	mg/l	91.5	100	191	99.5	80-1209
Total Organic Carbon	GP6403/GN13463	D31337-1	mg/l	2.4	10	12.2	98.0	80-1209

Associated Samples:
Batch GP6393: D31362-1
Batch GP6403: D31362-1
(\*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

#### MATRIX SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D31362 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Bromide	GP6393/GN13433	D31337-2	mg/l	0.0	2.5	2.5	4.1	20%
Bromide	GP6393/GN13433	D31337-2	mg/l	0.0	2.5	2.5	4.1	20%
Chloride	GP6393/GN13433	D31337-2	mg/l	5.5	10	15.4	3.3	20%
Nitrogen, Nitrate	GP6393/GN13433	D31337-2	mg/1	3.7	5.65	8.9	1.1	20%
Nitrogen, Nitrite	GP6393/GN13433	D31337-2	mg/l	0.0	0.305	0.29	3.4	20%
Nitrogen, Nitrite	GP6393/GN13433	D31337-2	mg/l	0.0	0.305	0.29	3.4	20%
Sulfate	GP6393/GN13433	D31337-2	mg/l	91.5	100	193	1.0	20%
Total Organic Carbon	GP6403/GN13463	D31337-1	mg/l	2.4	10	12.3	0.8	20%

Associated Samples:
Batch GF6393: D31362-1
Batch GF6403: D31362-1
(\*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits



03/07/12



## **Technical Report for**

K.P. Kauffmann Company, Inc.

Wattenberg Tank

Accutest Job Number: D32254

Sampling Date: 02/28/12



### Report to:

Apex Consulting Services PO Box 369 Louisville, CO 80027-0369

mhattel@msn.com; slaramesa@kpk.com

ATTN: Mike Hattel

Total number of pages in report: 26



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Brad Madadian
Laboratory Director

Client Service contact: Shea Greiner 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW) UT (NELAP CO00049)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories. Test results relate only to samples analyzed.

## Sections:

## **Table of Contents**

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	
Section 3: Sample Results	
3.1: D32254-1: TANK-1	7
	8
	9
4.1: Chain of Custody	10
Section 5: Metals Analysis - QC Data Summaries	
5.1: Prep QC MP6943: Ca,Mg,K,Na	
Section 6: General Chemistry - QC Data Summaries	
6.1: Method Blank and Spike Results Summary	
6.2: Blank Spike Duplicate Results Summary	
6.4: Matrix Spike Results Summary	
65. Matrix Spike Duplicate Results Summary	



N









## Sample Summary

K.P. Kauffmann Company, Inc.

Job No:

D32254

Wattenberg Tank

Sample Number	Collected Date Time By	Matrix Received Code Type	Client Sample ID	
D32254-1	02/28/12 10:00 MH	02/28/12 AQ Water	TANK-1	
D32254-1F	02/28/12 10:00 MH	02/28/12 AQ Water	TANK-1	





## CASE NARRATIVE / CONFORMANCE SUMMARY

Client: K.P. Kauffmann Company, Inc. Job No

D32254

Site:

Wattenberg Tank

**Report Date** 

3/7/2012 3:51:23 PM

On 02/28/2012, I sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.8 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D32254 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

## Metals By Method SW846 6010C

Matrix AO

Batch ID: MP6943

- All samples were digested within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32130-4FMS, D32130-4FMSD were used as the QC samples for the metals analysis.
- The matrix spike (MS) recovery(s) of Sodium are outside control limits. Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

### Wet Chemistry By Method ASTM D287

Matrix ALL

Batch ID: GN13910

The data for ASTM D287 meets quality control requirements.

#### Wet Chemistry By Method EPA 1664A

Matrix AQ

Batch ID: GP6635

- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

## Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ

Batch ID: GP6617

- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32251-1MS, D32251-1MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Chloride analysis.
- D32254-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.

## Wet Chemistry By Method SM20 2540C

Matrix AQ

Batch ID: GN13888

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32254-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

### Wet Chemistry By Method SM20 5310B

Matrix AC

Batch ID: GP6630

2

- All samples were prepared within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D32162-1DUP, D32162-1MS, D32162-1MSD were used as the QC samples for the Total Organic Carbon analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.



Sample Results	
Report of Analysis	

Client Sample ID: TANK-1 Lab Sample ID:

D32254-1 AQ - Water

Date Sampled: 02/28/12 Date Received: 02/28/12

Percent Solids: n/a

Project:

Matrix:

Wattenberg Tank

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	Ву	Method
Chloride	10400	250	mg/l	500	02/28/12 20:50	JML	EPA 300/SW846 9056
HEM Oil and Grease	42.2	4.8	mg/l	1	03/06/12	SWT	EPA 1664A
Nitrogen, Nitrate	3.1	1.1	mg/l	25	02/28/12 16:40	JML	EPA 300/SW846 9056
Nitrogen, Nitrite a	< 5.0	5.0	mg/l	500	02/28/12 20:50	JML	EPA 300/SW846 9056
Solids, Total Dissolved	17600	10	mg/l	1	02/29/12	JD	SM20 2540C
Specific Gravity by Hydrome	te 1.0122			1	02/29/12	CJ	ASTM D287
Sulfate	334	13	mg/l	25	02/28/12 16:40	JML	EPA 300/SW846 9056
Total Organic Carbon	2310	120	mg/l	119	03/02/12 11:03	GH	SM20 5310B
рН	8.19		su	1	02/28/12 14:45	JK	SM20 4500H

<sup>(</sup>a) Elevated detection limit due to matrix interference.

## Report of Analysis

Page 1 of 1

Client Sample ID: TANK-1 Lab Sample ID:

D32254-1F

Date Sampled: 02/28/12 Date Received: 02/28/12

Matrix:

AQ - Water

Percent Solids: n/a

Project:

Wattenberg Tank

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium Magnesium Potassium Sodium	147000 36500 68200 5630000	20000 10000 50000 20000	ug/l ug/l ug/l ug/l	50 50 50 50	02/29/12 02/29/12	02/29/12 JM 02/29/12 JM 02/29/12 JM 03/01/12 JB	SW846 6010C <sup>1</sup> SW846 6010C <sup>1</sup> SW846 6010C <sup>1</sup> SW846 6010C <sup>2</sup>	SW846 3010A <sup>3</sup> SW846 3010A <sup>3</sup> SW846 3010A <sup>3</sup> SW846 3010A <sup>3</sup>

(1) Instrument QC Batch: MA2220 (2) Instrument QC Batch: MA2225

(3) Prep QC Batch: MP6943



Misc. Forms	
Custody Documents and Other	Forms
Custody Documents and Other	r or ms
Includes the following where applica	able:
Chain of Custody	



# Seature sector of

## CHAIN OF CUSTODY

Life in	The secretary of the second section and	COSCOL IMPROVINGO					036 You 3-425-6							800 ]	33 FED-EX	Tracking	<del></del>				Bottle O	rder Con	stro! #			
Optional.					303-425-6021 FAX: 303-425-6854								Acculest Quote #							t Job#	~ ~	77~	) r= 11			
	Laborator	i e s												ļ									<b>リ</b> ョ	66	254	
	Client / Reporting Information				Proje	ect Infor	mation	-		_										Reque	sted A	nalysis	5		Matrix Code	В
Company Na	me			Project N		WATT		RG	TAN	ĸ															DW- Drinking VI	
Address	K.P. Kauffman Company, Inc.			Streat											(A)							GW- Ground W WW- Water				
	roadway, Suite 2800				<b>3</b> .							ΕĹ									SW- Surface W	ater				
lity	State		Zip	City	State							2									SO- Soll SL-Sludge					
Denve		80202-46		Fort Lupton CO							7	Z E		9	_						01-04					
roject Cont	Kent Gilbert	kgilbert@kok	com	Project #									166	는 S		Ξ	5						LIQ- Other Liquid			
hone #				Fax#											GREASE 1664	(NITRATE, NITRITE, E, CHLORIDE)		rg .	GRAVITY			1				
Samplers's I	303-825-4822 Name MICHAEL HATTEL (30	3 665 1400\		Client Pu	rchase Order	#							7	591	Æ	Ξ ü		0)	ဗ			ı İ			AIR- Air	
	MICHAEL HATTEL (50			Collecti	20			Nhu	mber	of n	racar	ned			Ö	NS		Š	蓝	1					SOL-Other So WP-Wipe	lid
Accutest   Sample #		SUMMA#				Matrix	# of	ž	TT		S S	yeu	1	COR	OIL &	ANIONS (NITRATE, NI) SULFATE, CHLORIDE)	표	CATIONS (Ca, K, Mg, NA)	SPECIFIC	TDS	10C				LAB USE O	NL
- anpie #	Field ID / Point of Collection TANK - I	MEOH Vial a		Time	Sampled by		7	X	=-	-	X	أداع	<u> </u>	_Ñ	х	X	X	x	X	x	x	П			DI	_
	IMIN-1		2/20/2	1000	MIDU	LIG		<u>^</u>	$\vdash$	+	-	+	+-	-	~	\ <u>^</u>		Ĥ	-	Ë				+	(AA	7
			ļ				<b>.</b>	<u> </u>	┝╌┼	+	+	+-	+	$\vdash$				-	-	$\vdash$	$\vdash$	$\vdash$	-	+	- ( \M	4
-								L	Н	4	_	1	+-									<b>  </b>		-	- X	ام
																			<u> </u>						W	<u>ر</u>
																				İ						
			1																							
		-	-	1				Г	$\Box$	$\top$	$\top$	+	T													
		_	-	-	-			-	Н	+	╁	+	1					<del> </del>	t		<b></b> -			_		-
					-			H	$\vdash$	+		+-	+	H	-	-		-	-			$\vdash$	$\vdash$	+-		_
									Ш	_	4	+	1						-	<u> </u>		$\vdash$	$\vdash$		<del></del>	
															L										L	_
25-1	Turnaround Time ( Business days)	1.9	1				liverable	Infor		LCL	_				2514	-	67.13.5		_		comment	.s / Rem	arks			-
X	Std. 10 Business Days	Approved B	y:/ Date:			nercial "A nercial "E		느	-		atego	orv A														
-				_		duced		=	-		atego					~	digment and and	green, ou								
					NJ FL					te Fo	rms				(	NO H	ard C	ору	2							_
	*			-	X Hard	opy		X	PDF						~	PDF	conv i	o Mil	e Ha	ttel w	ith AF	EX a	t mhatte	el@ms	n.com	
				-											-	-		-						-		_
Emar	i gency T/A data available VIA L	ablink		_										~~~	-	PDF	copy 1	o Su	sana	Lara-	Mesa	w KP	K at SL:	araMes	a@kpk.con	n
Litter	Sample	Custody must b	e documen	ted below	eachy time :	samples	change	ро	33988	ion,	inclu	ding	cour	ier d	elivery		Date Tin				Receive	. Die	100	12		
Relinquis	ned by Sampler:	1	Date Time:	1000	Rightyadely	11		ر در تره	101	B	Zinqu	ished	a by:				Date In	16.			2	id by.				
1 Relinguis	redit for		Date Time:	1000	Received By	146/1	4000	24	100	240	elinqu	iahed	Ву:				Date Tin	ie:		_	Receive	id By:			-	_
					3						<b>\$</b>										4					
Relinquisi	fied by:		Date Time:		Received By						ustod	y Sea	1#			Preserv	d where	applica	ble				On Ice	Coole	or Temp.	0
5			<u> </u>		5																				<u> </u>	_
												1	1	1	)											
													110	مسدا												

D32254: Chain of Custody

Page 1 of 2





#### Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D3225	54 Client: K.	P. KAUFFMAN COMP	ANY INC. Immediate Client Se	rvices Action Required:	No		
Date / Time Received: 2/28/2	2012 10:50:00 AM	No. Coolers:	1 Client Service A	ction Required at Login:	gin: No		
Project: WATTENBERG TANK	<		Airbill #'s: HD				
Cooler Security  1. Custody Seals Present: 2. Custody Seals Intact:  Cooler Temperature  1. Temp criteria achieved: 2. Cooler temp verification:	or N		Sample Integrity - Documentation  1. Sample labels present on bottles: 2. Container labeling complete: 3. Sample container label / COC agree:  Sample Integrity - Condition 1. Sample recyd within HT:	Y or N  Ø  Ø  Y or N  Ø			
3. Cooler media:	ice (bag)		2. All containers accounted for:	<b>2</b> 0			
Quality Control Preservation	Y or N N/A		3. Condition of sample:	Intact			
<ul><li>2. Trip Blank listed on COC:</li><li>3. Samples preserved properly:</li></ul>			Sample Integrity - Instructions  1. Analysis requested is clear:  2. Bottles received for unspecified tests  3. Sufficient volume rec'd for analysis:  4. Compositing instructions clear:  5. Filtering instructions clear:	Y or N  2	N/A		
Comments							
Accutest Laboratories V:(303) 425-6021			Youngfield Street (303) 425-6854	Wheat Ridge, CO www/acculest.com			

D32254: Chain of Custody

Page 2 of 2





Metal	s A	naly	<b>ysis</b>

### **QC Data Summaries**

#### Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

#### BLANK RESULTS SUMMARY Part 2 - Method Blanks

## Login Number: D32254 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP6943 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/1

Prep Date:

02/29/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	5.9	5.9		DHR#
Antimony	30	3.1	3.1		
Arsenic	25	5.9	5.9		
Barium	10	1.1	1.1		
Beryllium	10	.44	.5		
Boron	50	4.8	4.8		
Cadmium	10	.27	.27		
Calcium	400	9.6	15	12.0	<400
Chromium	10	.18	.79		
Cobalt	5.0	.35	.35		
Copper	10	.85	2.8		
Iron	70	3.4	13		
Lead	50	1.6	2.1		
Lithium	2.0	.28	1.2		
Magnesium	200	5.8	10	-3.6	<200
Manganese	5.0	.053	.31		
Molybdenum	10	.45	.87		
Nickel	30	.43	1		
Phosphorus	100	11	20		
Potassium	1000	55	55	-60	<1000
Selenium	50	3.8	3.8		
Silicon	50	3.8	3.8		
Silver	30	.18	.31		
Sodium	400	110	110	7.0	<400
Strontium	5.0		.25		
Thallium	10	2.9	2.9		
Tin	50	5.5	9.9		
Titanium	10	.11	.31		
Uranium	50	1.5	3.5		
Vanadium	10	.16	.22		
Zinc	30	.28	1.8		

Associated samples MP6943: D32254-1F

Results < IDL are shown as zero for calculation purposes (\*) Outside of QC limits



### BLANK RESULTS SUMMARY Part 2 - Method Blanks

Login Number: D32254 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP6943 Matrix Type: AQUEOUS

Prep Date:

Methods: SW846 6010C Units: ug/l

Metal

(anr) Analyte not requested

## Login Number: D32254 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP6943 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

02/29/12

Metal	D32130-4 Original		Spikelot MPICPALL		QC Limits	
Aluminum	anr	-				
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	anr					
Cadmium	anr					
Calcium	51300	76100	25000	99.2	75-125	
Chromium	anr					
Cobalt	anr					
Copper	anr					
ron	anr					
ead	anr					
ithium	anr					
agnesium	227	24300	25000	96.3	75-125	
anganese	anr					
olybdenum	anr					
ickel	anr					
hosphorus	anr					
otassium	33300	60700	25000	109.6	75-125	
elenium	anr					
ilicon						
Silver	anr					
Sodium	515000	533000	25000	44.0 (a)	) 75-125	
trontium	anr					
hallium	anr					
in						
itanium	anr					
Jranium						
Vanadium	anr					11.50
Zinc	anr					
		040 0000	E 4 1 P			

Associated samples MP6943: D32254-1F

Results < IDL are shown as zero for calculation purposes (\*) Outside of QC limits



## 5.1.2

#### MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D32254
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP6943 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

## Login Number: D32254 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP6943 Matrix Type: AQUEOUS Methods: SW846 6010C

Units: ug/l

Prep Date:

02/29/12

Metal	D32130-4 Original		Spikelot MPICPALL		MSD RPD	QC Limit
Aluminum	anr	-				
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron	anr					
Cadmium	anr					
Calcium	51300	74900	25000	94.4	1.6	20
Chromium	anr					
Cobalt	anr					
Copper	anr					
Iron	anr					
Lead	anr					
Lithium	anr					
Magnesium	227	24200	25000	95.9	0.4	20
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus	anr					
Potassium	33300	59700	25000	105.6	1.7	20
Selenium	anr					
Silicon						
Silver	anr					
Sodium	515000	535000	25000	52.0 (a)	0.4	20
Strontium	anr					
Thallium	anr					
Tin						
Titanium	anr					
Uranium						
Vanadium	anr					
Zinc	anr					

Associated samples MP6943: D32254-1F

Results < IDL are shown as zero for calculation purposes (\*) Outside of QC limits



# 5.1.2

#### MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D32254 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP6943 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits

(anr) Analyte not requested

(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.



#### SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D32254 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP6943 Matrix Type: AQUEOUS Methods: SW846 6010C

Units: ug/l

Prep Date:

02/29/12

Metal	BSP Result	Spikelot MPICPALI		QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron	anr			
Cadmium	anr			
Calcium	24800	25000	99.2	80-120
Chromium	anr			
Cobalt	anr			
Copper	anr			
Iron	anr			
Lead	anr			
Lithium	anr			
Magnesium	25100	25000	100.4	80-120
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus	anr			
Potassium	26300	25000	105.2	80-120
Selenium	anr			
Silicon				
Silver	anr			
Sodium	25700	25000	102.8	80-120
Strontium	anr			
Thallium	anr			
Tin				
Titanium	anr			
Uranium				
Vanadium	anr			
Zinc	anr			

Associated samples MP6943: D32254-1F

 ${\tt Results} \, < \, {\tt IDL} \, \, {\tt are } \, \, {\tt shown} \, \, {\tt as } \, \, {\tt zero} \, \, \, {\tt for } \, \, {\tt calculation} \, \, {\tt purposes} \, \,$ (\*) Outside of QC limits



## 51.4

#### SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D32254
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP6943 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested



General	Chemistry
Ochleran	Oliolillou,

QC Data Summaries

#### Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

### METHOD BLANK AND SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

## Login Number: D32254 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Chloride	GP6617/GN13892	0.50	0.29	mg/l	20	20.0	100.0	90-110%
HEM Oil and Grease	GP6635/GN13935	5.0	0.0	mg/l	40	35.9	89.8	78-114%
Nitrogen, Nitrate	GP6617/GN13892	0.045	0.0	mg/l	4.52	4.46	98.7	90-110%
Nitrogen, Nitrite	GP6617/GN13892	0.010	0.0	mq/l	6.09	6.26	102.8	90-110%
Solids, Total Dissolved	GN13888	10	0.0	mq/l	400	404	101.0	90-110%
Sulfate	GP6617/GN13892	0.50	0.0	mg/l	30	29.6	98.7	90-110%
Total Organic Carbon	GP6630/GN13931	1.0	0.0	mg/l	7.2	7.44	103.3	90-110%
pH	GN13883			su	8.00	7.96	99.5	99.3-100
pH	GN13883			su	8.00	7.96	99.5	99.3-100

Associated Samples: Batch GN13883: D32254-1 Batch GN13888: D32254-1 Batch GP6617: D32254-1 Batch GP6630: D32254-1 Batch GP6635: D32254-1 (\*) Outside of QC limits

## BLANK SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D32254
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit	
HEM Oil and Grease	GP6635/GN13935	mg/l	40	33.1	8.1	20%	

Associated Samples: Batch GP6635: D32254-1 (\*) Outside of QC limits

### DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D32254 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN13888	D32254-1	mg/l	17600	17600	0.0	0-25%
Total Organic Carbon	GP6630/GN13931	D32162-1	mg/l	2.5	2.5		0-20%

Associated Samples: Batch GN13888: D32254-1 Batch GP6630: D32254-1 (\*) Outside of QC limits

### MATRIX SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

## Login Number: D32254 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Chloride	GP6617/GN13892	D32251-1	mg/l	72.1	50	137	112.2	80-120%
Chloride	GP6617/GN13892	D32251-1	mg/l	80.9	50	137	112.2	80-120%
Nitrogen, Nitrate	GP6617/GN13892	D32251-1	mg/l	0.0	2.83	3.0	106.2	80-120%
Nitrogen, Nitrite	GP6617/GN13892	D32251-1	mg/l	0.019	0.305	0.35	108.7	80-120%
Sulfate	GP6617/GN13892	D32251-1	mg/l	26.8	50	79.1	104.2	80-120%
Sulfate	GP6617/GN13892	D32251-1	mg/l	27.0	50	79.1	104.2	80-120%
Total Organic Carbon	GP6630/GN13931	D32162-1	mg/l	2.5	10	13.3	108.0	80-120%

Associated Samples: Batch GP6617: D32254-1 Batch GP6630: D32254-1 (\*) Outside of OC limit:

(\*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

#### MATRIX SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D32254 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Chloride	GP6617/GN13892	D32251-1	mg/l	72.1	50	136	0.7	20%
Chloride	GP6617/GN13892	D32251-1	mg/l	80.9	50	136	0.7	20%
Nitrogen, Nitrate	GP6617/GN13892	D32251~1	mg/l	0.0	2.83	3.0	0.0	20%
Nitrogen, Nitrite	GP6617/GN13892	D32251-1	mg/l	0.019	0.305	0.32	9.0	20%
Sulfate	GP6617/GN13892	D32251-1	mg/l	26.8	50	79.1	0.0	20%
Sulfate	GP6617/GN13892	D32251-1	mg/l	27.0	50	79.1	0.0	20%
Total Organic Carbon	GP6630/GN13931	D32162-1	mg/l	2.5	10	13.2	0.8	20%

Associated Samples: Batch GP6617: D32254-1 Batch GP6630: D32254-1

(\*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits



04/11/12





### **Technical Report for**

K.P. Kauffmann Company, Inc.

Wattenberg Tank

Accutest Job Number: D33211

Sampling Date: 03/29/12

#### Report to:

Apex Consulting Services PO Box 369 Louisville, CO 80027-0369

mhattel@msn.com; slaramesa@kpk.com

ATTN: Mike Hattel

Total number of pages in report: 26



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

Brad Madadian

**Laboratory Director** 

Client Service contact: Shea Greiner 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1) This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories. Test results relate only to samples analyzed.

#### **Sections:**

## **Table of Contents**

-1-

Section 1: Sample Summary	3
Section 2: Case Narrative/Conformance Summary	
Section 3: Sample Results	6
3.1: D33211-1: TANK-1	7
3.2: D33211-1F: TANK-1	8
Section 4: Misc. Forms	9
4.1: Chain of Custody	10
Section 5: Metals Analysis - QC Data Summaries	12
<b>5.1:</b> Prep QC MP7213: Ca,Mg,K,Na	13
Section 6: General Chemistry - QC Data Summaries	
6.1: Method Blank and Spike Results Summary	22
6.2: Blank Spike Duplicate Results Summary	23
6.3: Duplicate Results Summary	
6.4: Matrix Spike Results Summary	
6.5: Matrix Spike Duplicate Results Summary	



\_\_\_

5

σ

### Sample Summary

K.P. Kauffmann Company, Inc.

Job No:

D33211

Wattenberg Tank

Sample Number	Collected Date Time By	Matrix Received Code Type	Client Sample ID
D33211-1	03/29/12 10:30 MH	03/29/12 AQ Water	TANK-1
D33211-1F	03/29/12 10:30 MH	03/29/12 AQ Water Filtered	TANK-1





#### CASE NARRATIVE / CONFORMANCE SUMMARY

Client: K.P. Kauffmann Company, Inc.

Job No

D33211

Site:

Wattenberg Tank

Report Date

4/11/2012 1:03:49 PM

On 03/29/2012, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 6 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D33211 was assigned to the project. The lab sample ID, client sample ID, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

#### Metals By Method SW846 6010C

Matrix AQ

Batch ID: MP7213

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33292-1MS, D33292-1MSD were used as the QC samples for the metals analysis.

#### Wet Chemistry By Method ASTM D287

Matrix ALL

Batch ID: GN14449

The data for ASTM D287 meets quality control requirements.

#### Wet Chemistry By Method EPA 1664A

Matrix AO

Batch ID: GP6940

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

#### Wet Chemistry By Method EPA 300/SW846 9056

Matrix AQ

Batch ID: GP6853

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33178-1MS, D33178-1MSD were used as the QC samples for the Chloride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Chloride analysis.
- D33211-1 for Nitrogen, Nitrate/Nitrite: Elevated detection limit due to matrix interference.

#### Wet Chemistry By Method SM20 2540C

Matrix AQ

Batch ID: GN14339

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33110-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.



#### Wet Chemistry By Method SM20 5310B

Matrix AQ

Batch ID: GP6875

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D33075-1DUP, D33268-4MS, D33268-4MSD were used as the QC samples for the Total Organic Carbon analysis.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.



Sample Results	I January Saderre in
Report of Analysis	

Client Sample ID: TANK-1 Lab Sample ID:

D33211-1

Matrix:

AQ - Water

Date Sampled: 03/29/12 Date Received: 03/29/12

Percent Solids: n/a

Project:

Wattenberg Tank

#### General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	Ву	Method
Chloride	9800	250	mg/l	500	03/29/12 14:01	GH	EPA 300/SW846 9056
HEM Oil and Grease	69.9	5.0	mg/l	1	04/10/12	<b>SWT</b>	EPA 1664A
Nitrogen, Nitrate a	< 1.1	1.1	mg/l	25	03/29/12 13:50	GH	EPA 300/SW846 9056
Nitrogen, Nitrite a	< 5.0	5.0	mg/l	500	03/29/12 14:01	GH	EPA 300/SW846 9056
Solids, Total Dissolved	16800	10	mg/l	1	04/02/12	JK	SM20 2540C
Specific Gravity by Hydrome	ete 1.0086			1	04/09/12	MM	ASTM D287
Sulfate	52.5	13	mg/l	25	03/29/12 13:50	GH	EPA 300/SW846 9056
Total Organic Carbon	486	13	mg/l	12.5	04/02/12 16:30	JML	SM20 5310B
pH	7.18		su	1	03/29/12 15:30	JK	SM20 4500H

(a) Elevated detection limit due to matrix interference.

Client Sample ID: TANK-1 Lab Sample ID: D33211-1

D33211-1F Matrix:

AQ - Water Filtered

Date Sampled: 03/29/12 Date Received: 03/29/12

Percent Solids: n/a

Project:

Wattenberg Tank

#### Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium Magnesium Potassium	220000 31000 290000	20000 10000 50000	ug/l ug/l ug/l	50 50 50	04/03/12	04/03/12 JB 04/03/12 JB 04/03/12 JB	SW846 6010C <sup>1</sup> SW846 6010C <sup>1</sup> SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup> SW846 3010A <sup>2</sup> SW846 3010A <sup>2</sup>
Sodium	5860000	20000	ug/l	50		04/03/12 JB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>2</sup>

(1) Instrument QC Batch: MA2305 (2) Prep QC Batch: MP7213



Misc. Forms	
C + 1 D + 1 Other Ferma	
Custody Documents and Other Forms	

Includes the following where applicable:

• Chain of Custody



100	
	_

laninal.	ACCUTE	Matthews					4036 Yo 03-425-							FED-	X Tracking					Bottle	Order Co	ontrol #		
Constitution	Laborato													Accu	est Quote #					Accute	esi Job#	D	332	11
P = 1	Client / Reporting Information	-6 - N			Pro	ect Info	rmation			1 = 2.	14			+		4 7 4		T	Requ	ested	Analysi	is T	A7 14	Matrix Codes
Company N				Davis at 1					TAN						1		T		11040	1	1	Ĩ		DW- Drinking Water
	K.P. Kauffman Company, Inc.	- 9.1		Project N	ame:	WAI	TENBE	:KG	IAN	K					1							i l		GW- Ground Wate
Address				Street																i			ı	WW- Water
1675 I	Broadway, Suite 2800		Zło	80											NITRITE, DE)	1	_	1				1		SW- Surface Water
City	State		Zrp	City					State						E_		NA)	1						SO- Soil SL-Sludge
Denve		80202-4		Fort L						co				╛	눌띴		- ñ	١.			İ			OI-Oil
Project Cor	Kant Gilbert Susun.	/- bellester	HITTER TO	Project #										99	트 준		Σ	≧				- 1		
Phone #	Remoder Section	courses	Usa	Fax#										— <u>—</u>	≨ ⊇		X	≩						LIQ- Other Liquid
	303-825-4822													AS	(NITRATE, NI E, CHLORIDE)		3	GRAVITY	1					AIR- Air
Samplers's	Name MICHAEL HATTEL (30				rchase Order	#							759	ി ഗ	ANIONS (N SULFATE,		CATIONS (Ca, K, Mg,	SPECIFIC (						SOL-Other Solid
Accutest		SUMMA#	1	Collect	ion			Nur	nber	of p	reser	ved E	ottles	•8	S 4		₽	Ö		10				WP-Wipe
Sample #	Fleid ID / Point of Collection	MEOH Viel		Time	Sampled by	Matrix	# of bottles	Ę	F G	80 24	S S	\$ \$ \$	MEOH	O ENCOR	NA IN	표	₹	SPE	TDS	700				LAB USE ONL
	TANK - I		3/20/12	2030	MDH	LIQ	7	х			x			Х	х	х	х	x	х	х				101
			1,000-1,000-1,000											İ			i							
																								13/29
																	<u> </u>							
											$\perp$						<u> </u>					$\sqcup$		
				ļ					Ц.	4	1				ļ						$\perp$	$\sqcup$	$\perp$	
1 de dage	Turnaround Time ( Business days)		<u> </u>			Dave D	aliverable	1		_	tion through			L					<u>_</u>		nts / Rem		_	<u></u>
V	Std. 10 Business Days	Approved B	er! Data:	P 40 30		nercial"		Inton	FULL			990 101, 110	81 VE		112.00		•			OHIII IO	113 / 15611	Idina	100	and the same of th
<u> </u>	1	Apploted D	J., Date.			nercial "I		=	NYAS			nı A												
	<u>.</u> 1			-		duced	•	H			atego	-												
	1			•	☐ NJ FU			=	State			, -			NO H	ard C	onv							
	i			•	x Hard C			×	PDF						,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,									
	j ,														PDF	copy t	o Mik	e Ha	ttel w	ith Ai	PEX a	t mhat	tel@m:	sn.com
	]			-													_							
Emer	gency T/A data available VIA L	ablink Sustody must b	e danument	ad balc	nach tiere	amnia	chance	nos	20051	on '	nolus	Dag a	ourie-	daliva		opy t	o Su	sana	Lara-	wiesa	WKP	K at S	LaraMe	sa@kpk.com
Relinquis	had by Sampler	rustouy must D	Date Time	ed DelOW	Reseived By	-anipi03	unange	pus	94291	Ri Ri	upolie	ahed B	A:	2011461	у.	Date Tin	jū:			Rejeiv	ed By:	1		112:25
1 7	White the		8/25/1	1225	1					2						,,,				2/1/	61	De	cal/	2(500)
Relinquis	hed by:		Date Time:		Received By					R	alingul	shed B	y:			Date Tin	9:			Receiv	ad By:	-		<del>1011</del>

D33211: Chain of Custody

Page 1 of 2



#### Accutest Laboratories Sample Receipt Summary

ccutest Job Number: D3321			MAN COMPA		Immediate Client Service Client Service Action		No
ate / Time Received: 3/29/20 oject: WATTENBERG TANK		No. Coo	lers:	1 Airbill #		, to quit ou at 2 - 5	110
	or N	esent:	Y or N  ☑ □  ☑ □	Sample label     Container lab     Sample container	ity - Documentation s present on bottles: eling complete: ainer label / COC agree: rity - Condition	Y or N  O O  Y Or N	
Cooler temp verification:     Cooler media:	Infared gun			Sample recve     All containers	d within HT:		
Auality Control Preservation  1. Trip Blank present / cooler:  2. Trip Blank listed on COC:  3. Samples preserved properly:  4. VOCs headspace free:	Y or N N/	_		Analysis req     Bottles rece     Sufficient vo	sample:  rity - Instructions  uested is clear: ived for unspecified tests  lume rec'd for analysis: g instructions clear:	Y or N  V □  U  U  U  U  U  U	N/A
Comments				5. Filtering inst	ructions clear:		V
Accutest Laboratories V:(303) 425-6021				oungfield Street 03) 425-6854		Wheat Ridge, CO www/accutest.com	

D33211: Chain of Custody

Page 2 of 2





Metals Analysis	
QC Data Summaries	

#### Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

#### BLANK RESULTS SUMMARY Part 2 - Method Blanks

## Login Number: D33211 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP7213 Matrix Type: AQUEOUS

Methods: SW846 6010C Units: ug/l

Prep Date:

04/03/12

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	5.9	21		
Antimony	30	3.1	3.2		
Arsenic	25	5.9	7.6		
Barium	10	1.1	.5		
Beryllium	10	. 44	3.1		
Boron	50	4.8	2.6		
Cadmium	10	.27	.59		
Calcium	400	9.6	7.3	14.8	<400
Chromium	10	.18	.39		
Cobalt	5.0	.35	. 4		
Copper	10	.85	3		
Iron	70	3.4	19		
Lead	50	1.6	2.9		
Lithium	2.0	.28	.65		
Magnesium	200	5.8	11	1.9	<200
Manganese	5.0	.053	1.8		
Molybdenum	10	.45	2.1		
Nickel	30	.43	.53		
Phosphorus	100	11	59		
Potassium	1000	55	61	58.1	<1000
Selenium	50	3.8	5.7		
Silicon	50	3.8	2.1		
Silver	30	.18	.65		
Sodium	400	110	98	-42	<400
Strontium	5.0		1.5		
Thallium	10	2.9	3		
Tin	50	5.5	24		
Titanium	10	.11	1.2		
Uranium	50	1.5	2.2		
Vanadium	10	.16	.39		
Zinc	30	.28	1.5		

Associated samples MP7213: D33211-1F

Results < IDL are shown as zero for calculation purposes (\*) Outside of QC limits



#### BLANK RESULTS SUMMARY Part 2 - Method Blanks

Login Number: D33211 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP7213 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

Login Number: D33211
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

QC Batch ID: MP7213 Matrix Type: AQUEOUS

Methods: SW846 6010C Units: ug/l

Prep Date:

04/03/12

Metal	D33292-1 Original		Spikelot MPICPALL		QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	anr				
Beryllium					
Boron					
Cadmium	anr				
Calcium	84400	111000	25000	106.4	75–125
Chromium	anr				
Cobalt					
Copper	anr				
Iron	anr				
Lead	anr				
Lithium					
Magnesium	23900	51100	25000	108.8	75–125
Manganese	anr				
Molybdenum					
Nickel					
Phosphorus					
Potassium	4830	33500	25000	114.7	75-125
Selenium	anr				
Silicon					
Silver	anr				
Sodium	84700	114000	25000	117.2	75–125
Strontium					
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Results < IDL are shown as zero for calculation purposes (\*) Outside of QC limits

Login Number: D33211 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP7213 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits (anr) Analyte not requested

## Login Number: D33211 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP7213 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

04/03/12

Metal	D33292- Origina		Spikelot MPICPALI		MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	anr					
Beryllium						
Boron						
Cadmium	anr					
Calcium	84400	112000	25000	110.4	0.9	20
Chromium	anr					
Cobalt						
Copper	anr					
Iron	anr					
Lead	anr					
Lithium						
Magnesium	23900	51700	25000	111.2	1.2	20
Manganese	anr					
Molybdenum						
Nickel						
Phosphorus						
Potassium	4830	33800	25000	115.9	0.9	20
Selenium	anr					
Silicon						
Silver	anr					
Sodium	84700	114000	25000	117.2	0.0	20
Strontium						
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						
Associated s	amples MP	7213: D332	211-1F			
Results < ID (*) Outside	L are show of QC limi	wn as zero its	for calc	ulation ;	purposes	

## 5.7.2

#### MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D33211 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP7213 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits (anr) Analyte not requested  $\,$ 

18 of 26
ACCUTEST.

#### SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D33211 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP7213 Matrix Type: AQUEOUS Methods: SW846 6010C Units: ug/1

Prep Date:

04/03/12

Metal	BSP Result	Spikelot MPICPALL		QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	anr			
Beryllium				
Boron				
Cadmium	anr			
Calcium	26400	25000	105.6	80-120
Chromium	anr			
Cobalt				
Copper	anr			
Iron	anr			
Lead	anr			
Lithium				
Magnesium	27000	25000	108.0	80-120
Manganese	anr			
Molybdenum				
Nickel				
Phosphorus				
Potassium	28100	25000	112.4	80-120
Selenium	anr			
Silicon				
Silver	anr			
Sodium	27900	25000	111.6	80-120
Strontium				
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				
Associated s	amples MP	7213: D332	11-1F	
Results < ID (*) Outside			for calc	ulation purposes

## 5.1.3

#### SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D33211 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

QC Batch ID: MP7213 Matrix Type: AQUEOUS

Methods: SW846 6010C Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested



General	Chemistry
Ochiciai	Chemisa

QC Data Summaries

### Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

### 9

### METHOD BLANK AND SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D33211 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Bromide	GP6853/GN14304	0.20	0.0	mg/l	20	20.2	101.0	90-110%
Chloride	GP6853/GN14304	0.50	0.0	mq/l	20	20.0	100.0	90-110%
HEM Oil and Grease	GP6940/GN14462	5.0	0.0	mq/l	40	38.5	96.3	78-114%
Nitrogen, Nitrate	GP6853/GN14304	0.045	0.0	mg/l	4.52	4.27	94.5	90-110%
Nitrogen, Nitrite	GP6853/GN14304	0.010	0.0	mg/l	6.09	6.01	98.7	90-110%
Solids, Total Dissolved	GN14339	10	0.0	mg/l	400	392	98.0	90+110%
Sulfate	GP6853/GN14304	0.50	0.0	mg/l	30	29.2	97.3	90-110%
Total Organic Carbon	GP6875/GN14351	1.0	0.0	mg/l	7.2	7.30	101.4	90-110%
На	GN14315			su	8.00	8.00	100.0	99.3-10

Associated Samples:
Batch GN14315: D33211-1
Batch GN14339: D33211-1
Batch GP6875: D33211-1
Batch GP6875: D33211-1
Batch GP6940: D33211-1
(\*) Outside of QC limits

### BLANK SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D33211
Account: KPKCOD - K.P. Kauffmann Company, Inc.
Project: Wattenberg Tank

Analyte	Batch ID	Units	Spike Amount	BSD Result	RPD	QC Limit	
HEM Oil and Grease	GP6940/GN14462	mg/l	40	37.3	3.2	20%	

Associated Samples: Batch GP6940: D33211-1 (\*) Outside of QC limits

a 3

## DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D33211 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Solids, Total Dissolved	GN14339	D33110-1	mg/l	50.0	40.0	22.2	0-25%
Total Organic Carbon	GP6875/GN14351	D33075-1	mg/l	3.0	3.0	0.0	0-20%

Associated Samples: Batch GN14339: D33211-1 Batch GP6875: D33211-1 (\*) Outside of QC limits

#### MATRIX SPIKE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D33211 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Bromide	GP6853/GN14304	D33178-1	mq/l	0.21	2.5	2.7	99.6	80-1209
Chloride	GP6853/GN14304	D33178-1	mq/l	8.6	10	18.9	10,3.0	80-120%
Nitrogen, Nitrate	GP6853/GN14304	D33178-1	mq/1	0.023	0.565	0.56	95.0	80-120%
Nitrogen, Nitrite	GP6853/GN14304	D33178-1	mq/1	0.0	0.305	0.29	95.2	80-120%
Sulfate	GP6853/GN14304	D33178-1	mg/l	216	200	413	98.5	80-120%
Total Organic Carbon	GP6875/GN14351	D33268-4	mg/l	2.6	10	13.1	105.0	80-120%

Associated Samples:
Batch GF6853: D33211-1
Batch GF6875: D33211-1
(\*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits



#### MATRIX SPIKE DUPLICATE RESULTS SUMMARY GENERAL CHEMISTRY

Login Number: D33211 Account: KPKCOD - K.P. Kauffmann Company, Inc. Project: Wattenberg Tank

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Bromide	GP6853/GN14304	D33178-1	mg/l	0.21	2.5	2.7	0.0	20%
Chloride	GP6853/GN14304	D33178-1	mg/l	8.6	10	18.9	0.0	20%
Nitrogen, Nitrate	GP6853/GN14304	D33178-1	mg/l	0.023	0.565	0.56	0.0	20%
Nitrogen, Nitrite	GP6853/GN14304	D33178-1	mg/l	0.0	0.305	0.29	0.0	20%
Sulfate	GP6853/GN14304	D33178-1	mg/l	216	200	413	0.0	20%
Total Organic Carbon	GP6875/GN14351	D33268-4	mg/l	2.6	10	13.2	0.8	20%

Associated Samples:
Batch GP6853: D33211-1
Batch GP6875: D33211-1
(\*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits